

SELECTING AND ADAPTING MATHEMATICAL TASKS THAT FOSTER NUMBER SENSE DEVELOPMENT: THE PRACTICE OF ONE PRIMARY TEACHER

Catarina Delgado¹, Joana Brocardo¹³ & Hélia Oliveira²³

Escola Superior de Educação, Instituto Politécnico de Setúbal¹

Instituto de Educação, Universidade de Lisboa²

Number sense development demands approaches to number and operations quite different from the traditional one, based on the use of algorithms (Yang, 2003). Teachers must be able to help student to reason and to use appropriate calculation methods (Yang, 2003). To achieve these objectives it's important that they reflect on the nature of the tasks they propose, on their potentialities to develop student's understanding (Stein et al, 2009), on the different strategies students can use, on the meaning they can give to the contexts and on the way students can mentally manipulate the numbers presented in the task (Fosnot & Dolk, 2001). This study aims to characterize the practices of two primary teachers in the selection and adaptation of tasks focused on developing students' number sense. The first author of this proposal conducted one year study in the context of a collaborative setting that involved two 3rd grade primary teachers. Data was collected in four semi-structured interviews, along the 30 collaborative working sessions (teachers and researcher) and in the teachers' classrooms (observed 26 lessons). In this poster we present aspects of Manuel's practice, one of the teachers. The findings indicate that he gradually developed a greater sensitivity to analyse students thinking and to relate it with the characteristics of the tasks. Manuel's decisions related with the adaptation and implementation of the tasks where strongly based on the choice of the numbers involved and the characteristics of the context that students had to explore. Finally, he explicitly began to prefer the use of more open tasks that provided the possibility of using various strategies.

References

- Fosnot, C., & Dolk, M. (2001). *Young mathematicians at work: Constructing multiplication and division*. Portsmouth, NH: Heinemann.
- Stein, M. K., Smith, M., Henningsen, M., & Silver, E. (2009). *Implementing standards-based mathematics instruction*. Reston: NCTM.
- Yang, D. C. (2003). Teaching and learning number sense - an intervention study of fifth grade students in Taiwan. *International Journal of Science and Mathematics Education*, 1(1), 115-134.